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# Zoonotic Disease (Monkey Pox) and the Imperativeness of Environmental Education

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**Abstract**

This study assessed the relationship between sustainable human activities and biodiversity conservation in Cross River State. To achieve this purpose, slash and burn agricultural practices, and poaching were operationalized as sub-independent variables while biodiversity conservation was treated as the dependent variable. The study's population comprised of 1,108,323 (estimated census of the Local Government Areas selected for the study) people while a multi-stage purposive sampling approach was employed to select a sample of 696 respondents from 7 communities. Correlational survey design was adopted as the research design. A questionnaire tagged "Sustainable Human Activities and Biodiversity Conservation Questionnaire" (SHABCQ) served as the instrument for data collection. Two research hypotheses were formulated for the study. Pearson Product Moment Correlation was used in analysing the data at .05 level of significance. Findings revealed that each of slash and burn agricultural practices, and poaching were significantly but negatively related to biodiversity conservation. Based on the findings, it was recommended among others that, more emphasis be made on creating practical awareness concerning the need to avoid any activity that would in any way whatsoever increase greenhouse gases in the atmosphere.

## Introduction

Current human experience with zoonotic disease is becoming a global concern. The likes of Covid 19 and the recent monkey pox that has resurfaced when people began to be relieved of the covid 19 protocols, for safety. Only to face another zoonotic infection called monkey pox. The concern here is how people contact these zoonoses which has brought the consciousness of human contact with animals and the various human activities carried in the environment that require environmental education to help mitigate these zoonotic diseases. A report from United National Environment Programme (UNEP) had revealed that three new zoonotic diseases which adversely affect and threatens the existence of mankind and sometime leads to death of humans.

The activities of man affect the environment adversely and the problem created in the environment also affect man directly or indirectly.

According to Anijah Obi (2001) who quoted Inyang-Abia (1998), noted that environment has always been taken for granted and it is wantonly abused by both the rich and the poor. He added that one reason for such is lack of capability to create and utilize the environment sustainably. He reported that amongst obvious results of environmental illiteracy are flooding, drought, ozone layer depletion, global warming desertification, encroachment, diseases, irregular climate conditions, among numerous other adverse effects. Environmental Education Association (EEA) 2020 of Southern Africa reported that recent zoonotic diseases outbreak includes Severe Acute Respiratory Syndrome (SARS) 2002, Bird flu in 2004, swine flu, 2009, Middle East Respiratory Syndrome (MERS) 2012, Ebola in 2015, Zika Virus in 2020. The above are all zoonotic disease emerging from animal to man. UNEP 2020 suggested that outbreak or epidemic diseases may become more frequent if we continue to destroy nature, exploit world species and engage in action that increase climate change.

From the assertion above, more zoonotic diseases like monkey pox is on the increase and man need to go back to the drawing board by using Environmental Education Strategy in encouraging afforestation, and educate people to preserve and conserve biodiversity of the earth which will help in the restoration of zoonotic habitat. A lot of plants and animals are under extinction and some animals lack basic nutrients from some species of plant and food sustenance in the forest that should provide the necessary diet for healthy living in the Ecosystem. Thus, some animals live with some deathly diseases that can be transferable from animal to man at the point of contact or by eating such animals and this will always cause an outbreak of zoonotic diseases that will spread from animal to man and man to man. The World Health Organization (WHO), established the fact that monkey pox is a viral zoonosis (a virus transmitted to humans from animals). The focus of this write up is to perus on the fact that environmental education can help produce a healthy environment like afforestation, reduce climate change that can provide enabling environment for healthy animal in a zoonotic environment to reduce further outbreak of zoonotic diseases that is likely to jump from animals

to man it can also educate man on how to avoid contact with animals through various means like tourism, bush meat market, use of animals as pet, porching etc. According to Onwineng (2022), Environmental educators are watchmen of the environment and have significant role to play in creating awareness that will change the negative attitude of people towards nature which have made man become vulnerable to several diseases and viruses, while creating a positive attitude in the general public on the various ways of solving environmental related diseases on zoonotic diseases.

## Literature Review

Scholars have contributed to this research through various ways. Armon & Cheruti (2011) noted that wild and domestic animals are the main milieu in which a large variety of zoonotic agents are seeded and disseminated. They believe that while domestic animals can be and are controlled by veterinarians, wild animals are completely out of human control when trade is illegal. For them, Federal animals are subjected to disease through a variety of vectors: arthropods, direct contact, predation and exposure to human environments (refuse, waste water, carcasses, slaughter houses, etc.)

Ferve *et al*. (2006) however show that inspite of regular and rigorous veterinary inspections, it cannot be excluded that some accidental infectious may happen affecting human and animal health when dealing with large numbers of domestic animals by means of trading. The above collaborates with the findings of this work that poaching of bush meat and trading of animals can lead to zoonotic disease. While Armon & Cheruti (2011) believe that this happens when trading with animals, especially wild animals, is illegal, Ferve et al. (2006) state that even though the domestic animals undergo rigorous veterinary inspections, transmission of zoonotic diseases can still occur when trading in large numbers. This study therefore suggests that the government should put a periodic ban on wild life trading poaching as well as large sales of domestic animals so that the veterinary doctors will have ample time to properly monitor and regulate the activities involving both wild and domestic animals in the society. This will help curtail the outbreak of zoonotic diseases.

Again, Amon and Cheruti (2011) present the problems related to the risk of contracting zoonotic infections and outbreaks in urban population to include: the widely accepted practice of keeping pets and wild animals in city flats and the absence of knowledge in the general population about animal parasites and measures of individual prophylaxis of zoonosis. They also see pet movement as an important issue related to zoonosis. They cited the following examples: Leishamaniasis (Leishmaniainfantum) outbreaks in dogs. Center for Disease Control and Prevention (CDC) noted that in 2011 an outbreak of variant virus infections was linked to exposure to pigs at agricultural fairs, public health officials quickly recognized the need to support states in using one health approach to respond effectively to moral influenza A and other zoonotic disease outbreak. The above literature also supported that animal market are indices that can cause a transfer of zoonotic diseases from animal to human and the need

for this environmental education on animal fairs and trading, because its import to be aware of the common ways people can get infected with germs that can cause zoonotic disease.

Mavroidu (2008) noted that immigration and tourisms are human activities that are included in broader field of human migration and travel. The thinker added that travel plays a significant role in the emergence and spread of disease, migration of human has provided the route of spread for infectious disease and zoonoses for example, plague, yellow fever, monkey pox and severe acute respiratory syndrome. AgaimMavroidi (2008), had established that tourism activities or movement of people from one route to the other had contributed in the spread of infectious diseases and zoonoses from animal to people and from people to people. This agree with the fact that this research has noted that tourism activities into zoo or national parks also help in spread of zoonotic diseases and recommended that tourism into such attractions should stay a distances from the animals to avoid coming into contact with the saliva of animals, blood, urine, mucous, feces, or other body fluids of an infected animal.

Wolfe *et al*. (2005) reported that hunting of wildlife by humans is an ancient practice that carries a substantial risk of cross species transmission. Despite the discovery of cooking 1.9 million years ago, the risk of zoonotic diseases emerging from hunting and eating wildlife is still of global concern because of the increase in human population density, globalized trade, and consequent increased contact between humans and animals. Wolfe et al (2005) also noted that Deforestation of tropical forest is a cause of increasing contact between wildlife and hunters. However, the mechanics of disease emergence are complex, he added that logging may be less likely to result in zoonotic emergence than selective attraction because of the relatively low contact rate between people and wildlife during clear-cutting.

Wolfe et a (2005) also observed that hunting and eating of wildlife is a globalized trade that has increased the contact between man and animals which keeps increasing the risk of human contact with zoonoses. Gottwalt (2013), noted that forest clearance alters ecosystem dynamics and leads to new breeding habitats for disease vectors-such as mosquitoes, fleas and ticks, by reshaping existing ecosystem boundaries. Such boundaries are often sites of contact between humans and forest pathogens: He added that there is a well-documented, positive association between the increased deforestation of an area and the increase deforestation of an area and the emergence of zoonotic, vector-borne diseases population living within or near those fragmental forest are at a much higher risk of infection due to increased contact with vectors at forest areas and the reduced biodiversity of the area.

The above literature supported that forest deforestation causes habitat loss for animals that live in the wild, the more land mass that is deforested the more animals get close to unprotected area and are exposed to a threatened environment that can create interface with man especial by predators, each contact between man and wild animal that is not scrutinized by veterinary doctors is a big threat to the transfer of likely zoonotic disease to man.

## Overview of Monkey Pox Outbreak

According to UK Health Security Agency (UKHSA) 2022, monkey pox was first discovered in 1958 when outbreak of pox-like disease occurred in monkeys kept for research. The first human case was recorded in 1970 in the Democratic Republic of the Congo (DRC) and since then the infection has been reported in a number of central and Western African Countries. Most cases are reported from the DRC and Nigeria. In 2003, monkey pox was recorded in the US when an outbreak occurred following the importation of rodents from Africa. Cases were reported in both humans and pet prairie dogs. All the human infections followed contact with an infected pet and all patients recovered. No other country outside west and central Africa has reported similar outbreaks. In May 2021 and June 2021, 3 monkey pox cases were reported from within the same family. The index case had recent travel history to Nigeria.

In December 2019, an individual in England was confirmed to have monkey pox after recently traveling from Nigeria to the UK. Travel related monkey pox cases have also been reported in the US in 2021, Singapore in 2019, Israel in 2018 and Benin in 1978. According to WIKIPEDIA, an ongoing outbreak of monkey pox was confirmed in May 2022, beginning with a cluster of cases found in the United Kingdom. The first recognized case was confirmed on 6$^{th}$May 2022, in an individual with travel link to Nigeria (where the disease is endemic) but suggested that cases were already spreading in Europe in the previous months. From 18 May onwards, cases were reported from an increasing number of countries and regions, predominantly in Europe, but also in North and South America. Asia, African and Australia. 1,489 cases had been confirmed as of 11$^{th}$June 2022. Monkey pox is an infectious viral disease that can occur in both humans and some other animals. The disease is caused by monkey pox viruses, a type of orthopox virus.

## Symptoms

Monkey pox symptoms include, fever, swollen lymph nodes and a rash that forms blisters and then crusts over. The time from exposure to onset of symptoms ranges from 5 to 21 days. The duration of symptoms is typically 2 to 4 weeks. They may be mild symptoms, but the incubation period is the duration/time between contact with the infected person and the time that the first symptoms appear. The incubation period for monkey pox is between 5 and 21 days.

Monkey pox infections is usually a self-limiting illness and most people recover within several weeks. However, severe illness can occur in some individuals. The illnesses begin with the following:

- Fever
- Headache
- Muscle aches
- Back aches
- Swollen lymph nodes
- Chills

- Exhaustion

With 1 to 5 days after the appearance of fever, a rash develops: often beginning of the face then spread to other parts of the body. The rash changes and goes through different stages before finally forming a scab which later falls off. An individual is contagious until all the scabs have fallen off and there is intact skin underneath. This scabs may also contain infectious virus materials

**Diagnosis**

According to UKHSA, clinical diagnosis of monkey pox can be difficult. And it is confused with other infections such as chicken pox. A definite diagnosis of monkey pox requires assessment by a health professional and specific testing in a specialist laboratory, sample should be submitted for laboratory test. Sample from suspected cases should be label as category B, diagnostic samples, while those from confirmed cases should be label as category A.

**Infection Prevention and Control**

The Government of United Kingdom noted that prevention of transmission of infection in respiratory and contact routes is required. Appropriate respiratory isolation is essential for suspected and confirmed cases. Scabs are also infectious and care must be taken to avoid infection through handling bedding, clothing etc. (UK Health Security Agency, 2022).

Monkey pox virus is classified as an ACDP Hazard group 3 pathogen and all laboratory work with live virus must be conducted at full containment level 3 (CL3) in accordance with the control of Substance Hazardous to Health Regulations 2002 (as amended) Clinical laboratories should be informed in advance of samples submitted from suspected or confirmed diagnosis of monkey pox. Laboratories must endure that appropriate control commensurate to CL3 are put in place to minimize risk to what extent it may occur without symptoms is not known. The classic presentation of fever and muscle pains followed by swollen glands with lessions all at the same stage, have not been found to be common to all outbreaks. Cases may be severe, especially in children, pregnant women or people with suppressed immune system (Wikipedia)

**Mode of transmission**

Monkey pox might be contacted from handling bush meat, animal bites or scratches, body fluids, contaminated objects, or other close contact with an infected person. Spread can occur by small droplets and possible the airborne route. People can spread the virus from the onset of symptoms until all the lessions have crusted. The virus is believed to normally spread among certain rodents in Africa. Diagnosis can be confirmed by testing a lesion for the virus' DNA, the disease can appear similar to chicken pox (Wikipedia).

Anyone who has direct contact (e.g. face to face, skin to skin, mouth to mouth, mouth to skin, including but not limited to sexual contact, with an infected person can get monkey pox (WHO, 2002 report).

**Description of Monkey Pox Outbreak**

According to WHO as of 21 May, 2022, 92 laboratories confirmed cases and 28 suspected cases of monkey pox with investigation ongoing, have been reported to WHO join 12 members states that are not endemic for monkey pox virus, across the WHO regions.

**Table 1:**
**Geographical distribution of confirmed and suspected cases of monkey pox in non-endemic country between 13-2 May 2022, as at 13:00**

| Country | Confirmed | Suspected |
|---|---|---|
| Australia | 1-5 | - |
| Belgium | 1-5 | 1-5 |
| Canada | 1-5 | 11-20 |
| France | 1-5 | 1-5 |
| Germany | 1-5 | - |
| Italy | 1-5 | - |
| Netherlands | 1-5 | - |
| Portugal | 21-31 | - |
| Spain | 21-31 | 6-10 |
| Sweden | 1-5 | - |
| United kingdom | 21-30 | - |
| United states of America | 1-5 | - |
| Total | 92 | 28 |

Source: World Health Organization

WHO received a report from established surveillance mechanisms (Integrated Diseases Surveillance and Response) for cases in endemic countries.

**Table 2:**

**Cases of monkey pox in endemic countries between 15th December to 1st May 2022**

| Country | Time Period | Cumulative Cases | Cumulative Death |
|---|---|---|---|
| Cameroon | 15th December 2021 to 22nd February 2022 | 25 | <5 |
| Central African Republic | 4th March to 10th April 2022 | 6 | <5 |
| Democratic Republic of the Congo | 1st January to 1st May 2022 | 1238 | 57 |
| Nigeria | 1st January to 30th April 2022 | 46 | 0 |

**Monkey Pox: Nigeria's Situation**

Nigeria Centre for Disease Control (NCDC) gave an update of monkeypox, on June 112, 2022 which are as follows:

**Total update on Monkey pox (MPX) in Nigeria serial number 07, EPI-week 23, Date June 12, 2022**

| Key Indicators | Number |
|---|---|
| Total confirmed cases in EPI week 23rd 2022 | 4 |
| Total suspected cases from January 1st to 12th June 2022 (EPI week 1 to 23) | 141 |
| Total suspected cases from January 1st to 12th June 2022) (EPI week 1 to 23) | 36 |
| Total death from 1st January 2022 to 12th June 2022 (EPI week 1 to 23) | 1 |
| Total deaths September 2017 – 12th June 2022 | 9 |
| Total confirmed cases in 2017 | 88 |
| Total confirmed cases in 2018 | 49 |
| Total confirmed cases in 2019 | 47 |
| Total confirmed cases in 2020 | 8 |
| Total confirmed cases in 2021 | 34 |
| Grand total of confirmed cases September 2017-12th June 2022 | 262 |
| Grand total of suspected cases September – 15th June 2022 | 652 |

Source: Nigeria Centre for Disease Control

**Epidemiological Summary**

NCDC reported that since September 2017, Nigeria has continued to report sporadic cases of monkey pox (mpx) and noted that on May 26th 2022 a monkey pox National Emergency Operation Centre (EDC) was activated in response to the risk assessment conducted, which put Nigeria at a high risk for a monkey pox outbreak. The essence of the activation was to improve the coordination of related preparedness/response activates across the country. NCDC also noted that (.31) new suspected cases reported in (EPI) week 23, 2022 (6th to 12th June 2022

from 13 states – Lagos (5), Katsina (4), Ondo (4), Bayelsa (4), Nasarawa (3), Ogun (3), Oyo (2),AkwaIbom (1), Delta (1(, Edo (10, Kaduna (1), Kano (1) and imo (1). NCDC added that there were (4) new positive cases in (EPI) week 23 2022 from four (4) states – Lagos (1) Delta (1), Oyo (1) and Nasarawa (1).

They also noted that from January 1st to 12th June 2022, there have been 141 suspected cases in total and 36 confirmed cases from (15) states – Lagos (7), Adamawa (5), Delta (3), Cross River (2), FCT (2), Kano (2), Bayelsa (2), Edo (2), Imo (2) Plateau (2), Nasarawa (1), Niger (1), Oyo (1) and, Ondo (1). One death was recorded of a 40 year old man with co-morbidity that was receiving immunosuppressive drugs.

**Environmental Education and approach to preventing Monkey Pox (zoonotic disease)**

Environmental education is a process of transmission of environmental awareness for the purpose of seeking a change of values and attitudes in order to ensure sustainable use of the immediate environment and its proper management. According to ISU, (1993), education will create awareness and understanding about the environment which leads to the effecting change of values and attitudes towards the environment and the efficient approach to environmental management.

Note that the key issues in environmental education is to educate people on environmental problems to acquire knowledge, skills, change of attitude, to improve the awareness of the environment which will arouse the concern of people regarding the state of our environment which will translate into commitment and actions of individual and collective organization, countries to ensure a sustainable practice and use of the environment without further creating environmental degradation.

Based on the above assertions, they are negative attitudes of people overtime that have directly or indirectly caused the transmission of monkey pox to man, which adequate environmental education, awareness and knowledge is needed to prevent such zoonotic disease, some of these include:

**Poaching**

Studies have shown that people in African countries depend on poaching for survival. This has led to an increase in the sales of bush meat, wildlife parts for traditional oriental, etc, environmental education will create the awareness of the dangers of eating bush meat from animals that die of unknown causes, eating meat, that isn't properly cooked in restaurant, having animals with zoonotic disease like monkeys and others as pets at home, can caused monkey pox from transmitting from animal to human. According to Ifedayo Adefifa, Director General of NCDC, who reported on Business day newspaper on May 2022, that avoiding bush meat is now the deterrent against monkey pox. Therefore, people need to be educated on the need to desists from poaching to avoid zoonotic diseases.

**Tourism Attraction to Zoonotic Disease Area**

A lot of tourists like travelling from one national park to another with the view of watching wildlife in nature, but closeness to some of these animals with disease can cause a zoonotic transmission of same from animal to man. Environmental educators have to advise people to visit the park with face masks and stay 10 meters distance away from animals with a one hour viewing limit in tourist areas to avoid the spread of zoonotic disease.

**Use of Animals as Pets**

A lot of people use animals as pets, some relate with animals, some have sex with animals. These contacts can lead to a transfer of zoonotic diseases from animals to humans with the tendency of spreading from human to human on further contact. Environmental education will educate people on the need to consult veterinary doctors to ascertain if such animals have diseases.

**Deforestation**

Studies had revealed that there is a constant destruction of forest habitats for farming and industrial development, the disappearance of the tropical forest which is a home to some 40% of plant and animal species. According to Anijah-Obi (2001), Egbai, (2023) it affects natural resources like food, timber, waxes, resins, fibres, and chemicals used for a variety of purposes. This loss of genetic base, is also a cause of grave concern as large reserve of genetic materials will be needed for the future development of biotechnology and genetic engineering. The loss of primary host like some trees that is a component of the ecosystem has caused imbalance in the food web. Some organisms that depend on some of the endangered species of this trees that is the primary host will have been deficient in an aspect of food vitality which could enable the infection and disease in animals that depends on it for food. There is a strong need to campaign for biodiversity restoration through environmental education to balance the ecosystem for a proper and rich food chain to eliminate disease that may possible create pandemic or zoonotic disease.

**Climate Change**

According to Acta Tropica (2022), climatic change drives zoonotic epidemics by altering host pathogen interaction. Emerging infectious disease, especially those with zoonotic potentials, are a growing threat to global health, economy and safety. The influence of global warming and geo-climatic variation on zoonotic disease epidemiology is evident by alterations in the host vector, and pathogen dynamics and their interactions.

The issues of temperature, rainfall, extreme conditions affect animal in their habitat. There is need to balance and regulate this environmental conditions to a tolerance level by use of environmental education to create the awareness about the increasing human activities that causes global warming to fight climate change.

**Live Animal market/Bush Meat Butchering**

Little attention is given to live animal market and bush meat butchering as a path for zoonotic disease transmission to humans, live animal market entrepreneur give less tension to the health of animals that are sold in the market, the butcher sick animal and sell to people not minding their zoonotic diseases situation. The contact of buying and selling monkeys with zoonotic diseases has a high tendency to contact the said disease.

When it comes to mitigating the spread and impact of monkey pox, environmental education plays a crucial role in promoting preventive measures and raising awareness among individuals and communities. Here are some effective strategies in environmental education for mitigating monkey pox:

1. Knowledge dissemination: Environmental education should focus on providing accurate and up-to-date information about monkey pox to the public. This includes understanding the mode of transmission, symptoms, prevention methods, and treatment options. By improving knowledge and awareness, individuals are more likely to take necessary precautions.
2. Community engagement: Engaging with local communities is essential for successful environmental education. This can be done through workshops, seminars, and interactive sessions that allow for open discussions on monkey pox. Encouraging community participation helps in building trust, addressing concerns, and promoting collective efforts in preventing the disease.
3. Hygiene practices: Emphasize the importance of good personal hygiene practices such as regular hand washing with soap and water, using hand sanitizers, and maintaining clean living spaces. Environmental education should underscore the role of cleanliness in preventing the spread of monkey pox.
4. Avoidance of high-risk areas: Educate individuals about the regions or environments where monkey pox outbreaks are more common. Encourage them to avoid close contact with animals, especially those suspected of carrying the virus. Communicate the importance of responsible wildlife interaction and discourage hunting or consuming bush meat that may carry the disease.
5. Vaccination campaigns: Promote the significance of vaccination as a preventive measure against monkey pox. Collaborate with local health authorities to implement vaccination campaigns in affected or high-risk areas. Educate individuals on the availability, safety, and benefits of the vaccine.
6. Communication through various channels: Utilize different communication channels to reach a wider audience. This includes leveraging traditional media (e.g., radio, television, newspapers), social media platforms, community bulletin boards, and local influencers. Tailor the messaging to suit the target audience and ensure it is easily understandable and culturally relevant.

By implementing these environmental education strategies, it is possible to mitigate the impact of monkey pox by promoting prevention, increasing awareness, and encouraging behavior

change within communities. "Environmental education plays a crucial role in mitigating monkey pox by increasing awareness about the disease and its transmission, promoting preventive measures, and fostering responsible behavior in communities. Through education, people can learn about the importance of maintaining proper hygiene, avoiding contact with infected animals, and seeking medical attention promptly if symptoms arise. Additionally, raising awareness about the ecological factors contributing to monkey pox outbreaks can help communities adopt sustainable practices and reduce potential exposure to the virus. By empowering individuals with knowledge, environmental education can be a valuable tool in controlling and preventing the spread of monkey pox.

**"Monkey pox Mitigation Strategies.**

Environmental educators strategies in mitigating monkey pox

Environmental educators can play a crucial role in mitigating monkey pox by raising awareness and implementing effective strategies. They can:

i. Educate communities about monkey pox: Provide information on the transmission, symptoms, and preventive measures to avoid its spread.
ii. Promote hygiene practices: Emphasize the importance of regular hand washing, maintaining personal hygiene, and proper waste disposal to reduce potential sources of infection.
iii. Advocate for vaccination: Encourage people to get vaccinated, as vaccines can help prevent monkey pox and limit its impact on communities.
iv. Monitor wildlife-human interactions: Raise awareness about the risks of close contact with wild animals and the importance of reporting sick or dead animals to appropriate authorities.
v. Collaborate with healthcare professionals: Work together with healthcare providers to ensure prompt identification, diagnosis, and containment of monkey pox cases.
vi. Support community-based surveillance: Empower communities to monitor and report any suspected cases promptly.
vii. Design and distribute educational materials: Create pamphlets, posters, and videos to reach a broader audience and reinforce preventive measures.
viii. Conduct workshops and training: Organize training sessions for healthcare workers and community members to enhance their understanding of monkey pox prevention and control.

By engaging in these strategies, environmental educators can contribute to the overall efforts to mitigate the spread and impact of monkey pox on both human and wildlife populations. "There are several environmental education methods to protect the ecosystem:

i. Awareness campaigns: Raising public awareness about environmental issues and the importance of ecosystem protection through various media and educational programs.

ii. Experiential learning: Providing hands-on experiences like field trips, nature walks, and outdoor activities to foster a deeper connection with nature.
iii. Curriculum integration: Incorporating environmental topics into formal education curricula at all levels to instill a sense of responsibility and knowledge from a young age.
iv. Community engagement: Encouraging community participation in conservation efforts and involving them in local environmental projects.
v. Workshops and seminars: Conducting workshops and seminars to educate people about sustainable practices and ecological principles.
vi. Citizen science programs: Involving the public in scientific research and data collection, enabling them to contribute to environmental monitoring and protection.
vii. Eco-friendly practices: Promoting sustainable living habits, such as recycling, reducing waste, and conserving energy and water.
viii. Advocacy and policy support: Encouraging individuals to advocate for strong environmental policies and take part in initiatives for ecosystem protection.
ix. Technology and media: Utilizing technology and social media platforms to spread information, ideas, and solutions for environmental challenges.

By employing these methods, we can create a more environmentally conscious society and work towards protecting the ecosystem for future generations. "Human activities can have significant impacts on ecosystems, leading to various environmental issues, including the spread of diseases like monkey pox. Some key impacts include:

i. Habitat Destruction: Deforestation, urbanization, and land-use changes can destroy natural habitats, displacing wildlife and altering ecosystems. This disruption can bring animals in closer contact with humans, increasing the risk of zoonotic diseases like monkey pox.
ii. Pollution: Pollution from industrial, agricultural, and urban sources can contaminate water, air, and soil. This can directly harm wildlife, disrupt food chains, and weaken the resilience of ecosystems, making them more susceptible to disease outbreaks.
iii. Climate Change: Human-induced climate change affects ecosystems worldwide, altering temperature and precipitation patterns. These changes can affect the distribution and behavior of animals, including disease vectors, potentially increasing the spread of diseases like monkey pox.
iv. Wildlife Trade: The illegal trade of exotic animals can introduce novel pathogens to new areas and facilitate the spread of diseases among species, including humans.
v. Human-Wildlife Interaction: Encroachment into natural habitats, wildlife handling, and hunting practices can lead to direct contact between humans and infected animals, increasing the risk of disease transmission.

To address these issues and prevent disease outbreaks, it's crucial to implement sustainable practices, protect natural habitats, and adopt responsible wildlife management measures.

## Conclusion

Zoonotic disease like monkey pox and others will continue to affect humans if we continue with actions that are unfriendly with nature. There is need to create environmental education awareness about some human activities that attracts zoonotic disease from animals to human directly or indirectly.

Anthropogenic activities like deforestation, poaching, tourism activities to zoonotic diseases area, use of animals as pets and activities that lead to climate changes, bush meat butchering and live animals market are indices that can cause a transfer of zoonotic diseases from animals to humans and the need to use environmental education as a strategy to mitigate the transfer of monkey pox to humans through contact.

## Recommendations

The following recommendations are necessary based on the outcome of the study:

(1) Government should be more deliberate in inclusion of environmental education in areas with rain forest to create awareness about deforestation effect and to combats climate change.

(2) Government should involve the services of veterinary doctors in national parks, zoos, live animal markers to ascertain the health of animals and reduces zoonotic diseases.

(3) Government should make policies that will ban the use of wild animal like monkeys etc as pet, since such animals are endangered species. Such laws should prohibit human having sex with animals (beastialism). Most of the primate like monkeys should be returned to wild.

(4) Government should partner with non-governmental organisation conserving animals in zoo, national parks and make a law restricting people from having a close contact with animals.

People should look at alternative way to bush meat marketing into poultry production.

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